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EDITORIAL

THE VALUE OF RECORDING OBSERVATIONS

THERE are many things in this world which we are accustomed to take for granted, and yet if they are subjected to a critical analysis we may find that information is disclosed which was not obvious previously and that much which had been accepted as fact was not founded on a sound basis. This is especially true in the case of those sciences which have to do with the care of animals in health and disease. Much knowledge has been acquired by what might be called the trial and error system. If such a system is not under reasonable control it is likely to develop into pure empiricism or quackery. It is essential that it should be regulated and subject to critical assessment of value, just as is the case in an organised piece of research. Now a great deal of basic veterinary knowledge or lore has been accumulated as a result of the trial and error method, much of it by the individual whose observation may be critical or casual. It has been passed on and in time accepted as fact when indeed it may be completely erroneous and based only on the general impression which has been conveyed to the recorder. The moral of this is obvious to any thoughtful person, and if proof were required of the value of a critical analysis of recorded observations the ever-increasing importance which rightly has been given to the science of statistics as applied to medical problems during the last twenty years should confound any sceptic. We therefore welcome such articles as the one on "Parturition in the Thoroughbred Mare," which we publish in this issue. In it the author gives in detail his observations in a series of 69 cases. He has submitted his observations to a critical analysis and as a result arrived at certain conclusions which will be of the greatest value to other workers in this field.

We would also draw attention to the article dealing with snake bite. Fortunately, poisonous snakes are rare in this country. Judging by the literature, it would appear that the injuries they may inflict are also uncommon. It may be that this apparent infrequency is due to a lack of recognition.

Both articles are from the pens of young men who are evidently keen observers. By recording their observations they benefit their profession, and let us hope that they may help to relight the torch which was so ably carried by the clinicians of the past.

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General Articles

SNAKE BITE IN ENGLAND

By H. de C. LUCKHAM, M.R.C.V.S.,
Wareham

In England there exist both poisonous and non-poisonous snakes. Of the former, the adder is common in the heath country of the southern counties. There is one other snake which is said to be poisonous, the smooth snake or Coronella; it is rare but can be found in the New Forest and in Dorset. The non-poisonous snakes are represented by the grass or ring snake and by the slow or blind worm. The latter is really a lizard. The grass snake emits a foul oily substance through its skin. When attacked it will bite, but the fangs do not contain poison.

All snakes hibernate in the winter months, roughly from October to March. The poison (active principle Venin) is stored in two pouches at the back of the jaw. The fangs are hollow and the poison is ejected through the fang and into the wound by pressure. There are rudimentary fangs in the upper jaw which will grow if the main fang is severely damaged.

Poison is not produced very rapidly, therefore a bite is more severe early in the year.

It is doubtful if adders can hear, but their sight is very keen. The temperature has a great effect on their powers of movement, heat being necessary for rapid action. They are not naturally aggressive but will retaliate if hurt, and especially if trapped.

In my own experience the following animals have been bitten by snakes: horses, cattle, sheep, pigs and dogs. Dogs have been affected most frequently. In the dog the common sites of injury are the lips, nose, throat, fore legs and paws.

This is the usual history. The dog is running loose; he will suddenly jump back and cry and show signs of fright. In about ten minutes signs of tenderness are evinced at the site of the bite. This is followed by swelling around the site, the swelling tending to spread towards the heart. This is followed by loss of consciousness, coma and collapse, and death. In a pale skin two punctures may be seen about one-quarter of an inch apart, and also the skin tends to go black. When death occurs it would appear to be from heart failure. Acute pain is not shown always, especially if the site is one which allows of rapid and profuse swelling. There is an old country saying that " Pain will be felt at the site of the wound on anniversary." It is a strange coincidence that I have lost two dogs from heart failure on or about the anniversary date of the bite.

If a case is seen early, i.e., before swelling has reached a maximum, prognosis is good.

Treatment.—Potassium permanganate is the best antidote. Make a strong solution and inject from 2 to 3 c.c.s subcutaneously in four or five places around the bite. Keep the heart going by stimulants, coramine, camphor in oil, or brandy or whisky ʒi-ʒii in water by the mouth. Pulv. nux. vom. grs. ss-grs. i in pill form is also very useful. Aspirin grs. x-xv appears to relieve the pain.

Most cases make an uninterrupted recovery and very rarely need further treatment.

Some dogs never seem to do well again after a bite. There is some degree of immunity developed after one bite, and this is increased by a second bite. One dog of my own, after being bitten three times, showed no symptoms on a subsequent occasion other than local swelling, and caught a rabbit in a straight chase about five hours after being bitten.

Cattle are bitten more frequently than is commonly supposed. Sites are around the mouth, the tongue, underneath the body and the legs. As a rule there are few symptoms other than local swelling. As this swelling subsides it leaves a hard fibrous residual area which will persist for life.

Three cases where the bite was in or near the milk vein are perhaps worthy of record. The first was seen some days after the bite. The cow was off her food and the milk yield had dropped. There was a swelling about the size of a Rugby football near the milk vein. This swelling was opened and had the appearance of a hæmatoma. A large quantity of black, clotted blood was removed. Local treatment was applied, coupled with stimulants, i.e., nux. vomica and ammon. carbonate. This cow made a fair recovery and was later slaughtered for food. The other two did not do well and both eventually went to the knacker.

A colt was bitten inside the thigh. There was profuse swelling, from which lymph exuded. There was systemic disturbance, a fast jumpy pulse, and the colt seemed to be in pain. Thirty c.c. of pot. permanganate solution was injected locally and stimulants administered. The swelling had subsided by the following day, but the leg had filled. The colt was out in a meadow. It was left out and returned to normal in about a week.

It has come to my knowledge that sheep have been bitten in the udder and a ram in the scrotum. The latter died.

Some years ago there was a letter published in a periodical in which it was reported that a pedigree cow died suddenly. A P.M. was made and a live adder was found in her rumen.

In England we do not pay much attention to snakes and their bites, for it is our good fortune that they are few. I would appear to have had more than my share of these incidents. It may be that snake bite is a commoner occurrence than it is usually supposed to be. My few notes may draw attention to an interesting problem.

PARTURITION IN THE THOROUGHBRED MARE

By J. B. TUTT, M.R.C.V.S.
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THE object of this article is to correlate as far as possible the various phenomena associated with the parturient mare. A study was made of the various conditions as they occurred in a thoroughbred stud over a period of two years, 1942 and 1943. Twenty-six mares were examined in 1942 and forty-three in 1943, when most of the information was collected—the examinations being of a more detailed character.

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The conditions studied were as follows :—

(1) The onset of mammary development and lactation.
(2) Time of waxing.
(3) Duration of pregnancy, together with observations regarding its effect on the sex and health of the foal.
(4) Stages of parturition, with special reference to the third stage of parturition.

Fresh batches of mares were sent to the stud each year to foal and then to be served by one of the resident stallions. Towards the end of the year after they had foaled and been covered they were returned to their owners, the foals then varying in age from four to five months.

Foaling is carried out in special foaling boxes, into which the mare is placed as the time of parturition approaches. Here a regular day and night attendance is kept, observation being obtained through a small panelling in the door so as not to disturb the mare when parturition is imminent.

Within a few days after foaling, if the weather is mild, the mare with foal at foot is allowed out for a few minutes' exercise.

This daily exercise is gradually increased in amount, until eventually, if the weather permits, they remain out for the greater part of the day. Apart from grazing, the mare receives supplementary feeding in the form of oats and hay.

Mammary Development

Thirty-seven mares were examined as to when the first signs of mammary development commenced. The average normal period appeared to be three weeks prior to foaling. According to the expected dates of parturition as assessed from the last service, the majority of mares in 1943 were over-time, and in some cases mammary development commenced after the date of expected foaling. The earliest appearance was six weeks before foaling—with five mares showing signs at five weeks, and nine mares at four weeks. At the other end of the scale, the mare Appeasement did not show any signs until after foaling, when her udder quickly developed and milk secretion commenced. Nathmoe commenced normal mammary development a month before foaling; this developed normally for two weeks and then remained static. There was never any secretion of milk and the foal died of malnutrition and ill-treatment on the part of the mare. Benvenuto Cellini, who slipped twins at 292 days, showed commencement of mammary activity and actually "waxed" three weeks before abortion. Mammary development did not progress normally, but became arrested, and there was never any milk.

In all the mares, with the exception of these three, milk secretion started after the commencement of the foal suckling. In only one instance did secretion commence before parturition. This was in the case of Nicolette, who ran milk for 24 hours before foaling. Mammary development commenced in her a month before foaling. In two cases development commenced a fortnight before foaling.

On these records it can generally be assumed that mammary development commences three weeks before parturition. Certain mares which have an individual trait to well marked mammary development may first show signs a little earlier, and may in an individual case run milk before foaling. Milk

secretion can be taken to commence normally after foaling and the foal started to suckle.

Waxing

Usually before parturition there appears a pearly wax-like bead on the tip of the teats, which is a secretion of the mammary gland. This is usually taken as indicative that parturition is near.

In 1942, twelve mares were examined for the onset of waxing. The variation range was from no wax to seven days prior to parturition. Five mares showed no wax at all, whilst five mares waxed and foaled in 24 hours. One mare waxed two days and another seven days prior to foaling.

In 1943, thirty-five mares were examined. Thirteen mares showed no wax, whilst thirteen mares waxed and foaled within 24 hours. Of these thirteen, seven foaled within 12 hours. Five mares waxed and foaled between 24 and 48 hours. The remaining mares waxed respectively at 18 days, 3½ days and three days before foaling. Benvenuto Cellini waxed three weeks before abortion.

From these observations it can be stated that the absence of waxing does not mean that parturition is not imminent.

However, when waxing occurs, it is highly probable that parturition will occur in 48 hours in 85 per cent. of cases.

Too much reliance must not be placed on waxing as an indication of parturition, as there are a few marked variations.

Period of Gestation

St. Cyr[1] puts the average gestation period as 346 days, with normal variations of 307 to 394 days. Von Oettingen[2] found the average of the Taakehnen breed to be 334 days. W. L. Williams[3] cites the average period to be about 342 days.

In 1942, on the study of twenty-six mares, the range was from 309 to 361 days, with an average of 340.6 days.

In 1943, on the study of forty-two mares, excluding the twin abortion at 292 days, the range was from 325 to 381 days, with an average of 354 days. In this year, the majority of the mares went over their time, and I believe this was found to occur in other studs throughout the country.

Sex of the Foal

In 1942, twenty-six foals were born and the sex ratio was 1 : 1. The average duration of pregnancy for a colt foal was 344.5 days and the variation range was from 335 to 361 days.

The average for a filly foal was 338.6 days, with a variation range from 309 to 355 days. The shortest gestation period for a viable foal was 309 days and it was a filly foal, whilst the longest period was 361 days and was a colt foal. In this year it will be seen that the average colt foal gestation was longer than that of a filly foal. The variation range, however, was wide in each case and no definite forecast could be made as to the probable sex of the foal.

In 1943, forty-three mares were studied. The twin pregnancy terminated at 292 days and were fillies of equal size. A blood sample of the mare was negative to Sal. abortus equi, but it is known as a fact that the majority of twin

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foals are aborted. Of the remaining viable foals, twenty were colt foals and twenty-two were filly foals. The average gestation period for a colt foal was 346 days, with a variation range of 325 to 371 days. The average period for a filly foal was 348 days, with a variation range of 336 to 381 days. The shortest period was 325 days and it was a colt foal, and the longest of 381 days produced a filly foal.

Therefore it will be noted that the findings in 1943 were the reverse of those in 1942. It can be correct to state that a prolonged gestation is not associated with a colt pregnancy. In fact, the statement that colts are carried longer than fillies seems to be open to question.

The State of the Health of the Foal at Birth and the First Few Months of Life

Williams[4] states that those foals approximating 365 days are usually ill from sepsis. In 1943 most foals were carried over-time, and ill-health at birth was not found to be associated with a prolonged gestation. In 1943, the number of foals born over 354 days was twelve, half of which were fillies, out of a total of forty-two viable foals. Not one of these foals were weekly at birth, neither did they develop scour nor septicæmia, nor were they ill in any way during the first few months of life when they were still under observation. In 1942, only two foals were carried over 354 days, and neither of them were weak or unwell. The illnesses encountered in 1943 were as follows:—

(1) Foal developed pneumonia with septicæmia, probably from navel infection, and died on the fifth day of birth. Gestation period was 353 days.

(2) An apparently very healthy foal died suddenly without any previous symptoms, from icterus of unknown origin, on the fifth day of birth; swabs from the cadaver were bacteriologically sterile. The gestation period was 336 days.

(3) A "sleeper" foal at birth, very weak and poorly developed, being unable to stand, died within 48 hours of birth. Gestation period 336 days. It is of interest to note that the mare during the last ten days of pregnancy developed marked locomotor inco-ordination of the hind limbs and had great difficulty in remaining upright when made to turn. These symptoms completely disappeared after she had foaled.

(4) A foal suffered from septicæmia with joint involvement and recovered under treatment. Gestation period 341 days.

(5) A mild attack of scour in a foal which cleared up in 48 hours. Gestation period of 334 days.

On these findings it can be stated that a prolonged pregnancy does not necessarily mean that the foal will be a weakling at birth, or develop sepsis in the first few weeks after birth. In fact, in 1943, those foals which developed symptoms of ill-health did not have a noticeably prolonged gestation period. This is not in accordance with the findings of Williams.

Retained Placentæ

Reference to the accompanying tables will show that there was no connection between the gestation period and the subsequent time of expulsion of the placental membranes. A prolonged gestation period did not necessarily result in an unduly

prolonged third stage of parturition. The longest period of gestation in 1943 was 381 days and the mare cleansed in one and a half hours; whilst mares pregnant 335 and 336 days retained their placentæ for one and two hours, respectively. A mare pregnant 371 days cleansed in a quarter of an hour; whilst a mare pregnant 361 days retained her cleansing for six hours.

Of the mares examined in 1942, the longest periods of retention were eight and nine hours respectively, with gestation periods of 352 and 354 days. Mares pregnant 352 and 349 days each cleansed in an hour. A mare pregnant 336 days cleansed in four hours.

From these findings it will be noted that although the majority of prolonged retentions had gestation periods of over 350 days, the results were in no way uniform, and it can be stated that prolonged retention is not inseparably associated with a prolonged gestation period.

Age of the Mare

In 1943 the age of thirty-three mares was taken into account. It was found that at no age was there a marked difference in the gestation periods, although mares over ten years of age had on the average shorter gestation periods.

Mares 5 years old and under.—Average 355 days. Variation from 342 to 360.

Mares 5-10 years.—Average 356 days. Variation from 336 to 381.

Mares over 10 years.—Average 351.3 days. Variation from 335 to 371.

The variation ranges will be seen to be equally marked in each group.

Subsequent Usefulness of the Foal for Stud Purposes

Von Oettingen[5] states that foals born at 315 to 320 days make excellent brood mares or sires, whilst those over 345 days never attained distinction at the stud. Williams[6] reports the following findings at a stud:—

Group 1. Mares born under 320 days.—Subsequently produced 17 per cent. aborts, or non-viable foals.

Group 2. Mares born from 321 to 339 days.—Subsequently produced 19.6 per cent. aborts, or non-viable foals.

Group 3. Mares born over 339 days.—Subsequently produced 33 per cent. aborts, or non-viable foals.

In comparison with the above, my findings were:—

	1942	*1943*
Group 1.	One filly.	None.
Group 2.	Seven fillies and three colts.	Eight colts and four fillies.
Group 3.	Ten colts and five fillies.	Twelve colts and eighteen fillies.

It will be seen that the vast majority of foals, in fact forty-five, were carried over 339 days. In Group 2 there were twenty-two foals, whilst there was only one foal born in the two years that had a gestation period under 320 days. If the findings of Williams and Von Oettingen are taken into consideration, the outlook on two years of breeding is not good if the future breeding abilities of the foals is being considered. As yet it is too early to see how these foals will turn out as regards breeding, and no clear-cut opinion can be formed.

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Generally speaking, it is quite possible that very few of these foals will attain distinction on the racecourse, but to say that they will have a poor ratio of viable foals if put to stud is a too wide-sweeping statement to make.

In 1943 the normal occurrence was for foals to be carried longer, and it is possible that war-time feeding and climatic conditions (the weather in March was very irregular) may be influencing factors. Taking everything into consideration, it is possible that the duration of pregnancy can have little effect on the future stud usefulness of the offspring. It is very common for mares to go over their time, and they rarely have an abbreviated pregnancy (except when associated with a twin pregnancy or a definite pathological condition). One would naturally expect an abbreviated pregnancy to affect the future breeding proficiency of the offspring more than a prolonged one. More data are required before a logical conclusion can be arrived at.

Signs of Parturition

Mares usually commence mammary development three weeks before parturition, but in a few instances this may be a little longer. Few mares foal without "springing," and during 1943 only one instance was noted, in the case of Appeasement. If a mare waxes, it can be stated than in 85 per cent. of cases foaling will occur in 48 hours. Quite a number of mares fail to wax, so this is not a reliable guide. There is no mucoid discharge, as in the cow. In fact, the vagina is sticky, not moist. There is no relaxation of the sacro-sciatic ligaments, nor do the labiæ of the vulva show much swelling.

First Stage of Labour

This is taken as the period of dilatation of the cervix. Uterine contractions force the fœtal sac through the cervix, bringing about its dilatation. Exact time periods were difficult to assess, as the mares were not noted all the time, and this stage sometimes commenced a little before the mare was seen again. On the average it can be taken that this period lasts about an hour, anyway under two hours, but absolute accuracy was not obtained. Mares show a variety of symptoms at this stage, all or only a few of which may be present in an individual case. Sweating is the symptom most often encountered, and this can vary from patchy sweating to the other extreme, when the mare will be seen to be standing with "steam" literally rising from her. An exception was Appeasement, who showed no sweating or discomfiture and foaled in five minutes. On the other hand, Point Duty showed discomfort and had to be assisted with delivery six hours later. This, however, is an abnormal case, as she in past pregnancies has never shown the second stage of labour and needs careful watching so as to be given assistance in order to save the life of the foal. She has an abnormally small vagina, which may account for the lack of voluntary straining. Other symptoms shown at this stage are: walking round the box, uneasiness, pawing the ground, getting up and lying down, and swishing of the tail. The presence of these and their severity vary in individual cases. This stage ends with the rupture of the allanto-chorionic membrane.

The Second Stage of Labour

This stage, during which the expulsion of the fœtus takes place, commences

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suddenly, either with straining or the appearance of the amniotic sac at the vulva, whichever occurs first; there is little delay between them and the mare foals lying down. In all the mares seen in 1943, the foal was presented in the normal anterior presentation, and this period was characterised by the mare lying and straining, rising and resting, and then commencing again. The amount of straining and the number varied considerably according to the time taken. All the mares foaled lying down, and it was a practice at the stud to break the umbilical cord and to ligate it with eucalyptus tape. In the majority of cases this stage of labour lasted under half an hour, and only in the one case already noted was there no definite sign of the second stage of labour. Appeasement foaled in five minutes and the expulsive efforts were few.

Third Stage of Labour

This is the period from the birth of the foal to the expulsion of the fœtal membranes. In 1942, examination was carried out on twenty mares and it was found that seventeen cleansed within the hour, two in eight to nine hours, and the remaining one in four hours. Those which cleansed within the hour showed variation ranges of gestation from 325 to 352 days, whilst the remainder had gestation periods of 352, 354 and 336 days, respectively.

In 1943, thirty-three mares were examined and it was found that twenty-seven cleansed under the hour; twelve within half an hour (one mare, Millieme, cleansed in five minutes). It is of interest to note that Point Duty, who showed no definite second stage of labour, retained her cleansing for six hours.

It will be seen that, over the period of two years, out of fifty-three mares examined, 92.4 per cent. cleansed under two hours (the majority under the hour).

The conclusion that can be drawn is that the thoroughbred mare should complete the third stage of labour under two hours. In those cases where the cleansing was retained, even up to nine hours, no ill-effects were noticed, such as laminitis or puerperal sepsis.

Should the retention persist over twelve hours the following course should be adopted:—

Examination to determine if it is possible to effect removal easily. Should it be still tightly adherent, it should be left and a pessary inserted. If not expelled during the next six hours, a further examination must be made and the case reconsidered. Under no circumstances should it be forcibly removed, or damage to the endometrium will ensue and leave a portal of entry for infection. Each case must be treated as an individual condition, and no definite time factor or specific line of treatment can be adopted.

The Umbilical Cord

This is the connection between the fœtus and its placenta and comprises the allantoic stalk surrounded by the amnion and the vestiges of the vitelline duct. In the mare it is divided into the amniotic portion, which extends from the umbilicus through the amniotic cavity to the allantois, and the allantoic portion which extends from the amnion to the allantoic-chorion through the allantoic sac. The amniotic portion consists of the investing amniotic sheath; two umbilical arteries; one or two umbilical veins; the urachus, and the vestiges

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of the vitelline sac. The surrounding and investing tissue is Whartonion jelly in a delicate connective tissue.

Unfortunately the lengths of the cords were not taken. Williams[7] found the average to be nineteen inches, equally divided between the amniotic and allantoic portions. The longest noted measured thirty inches. The cord usually ruptures as the mare rises or begins to move, or as a result of struggles of the fœtus, and as a rule this takes place about two inches from the umbilicus at a well-marked constriction, below which the cord is softer and more easily broken.

As previously noted, it was the practice at the stud to ligate the cord in this region, but it is a questionable procedure, as it holds in position the umbilical arteries and the urachus, which normally recoil into the umbilical ring and so seals any route of infection. Still further, it prevents the escape of any residual blood from the vein and imprisons the Whartonian jelly, which is partially removed by the mare nibbling the end.

It is sometimes necessary to break the cord, and in such cases this should be performed as cleanly as possible after respirations have commenced and the pulse in the umbilical arteries ceased. If the foal is born in dirty surroundings, then antiseptic treatment must be applied to the tip until it is desiccated. Normally, the retraction of the vessels and the urachus, together with the desiccation of the remaining tissues, should quite effectively seal any route of infection. Antiseptics may be applied as an added precaution, for the foal has a large urachus, but ligating would appear to be redundant, in fact, possibly detrimental.

Hippomanes

This is the name given to a structure which is usually expelled with the foal, and the literal translation means: "horses' hands." It is so termed because it is associated and confined to the parturient mare and in shape is not unlike the palm of a small hand. In some cases it is kidney shaped, although the indentation applicable to the kilus of the kidney is not well marked. In colour it is dark brown and is of a gelatinous nature. Many opinions have been expressed as to its function and structure. Some authors state that it is glycogenic in function and acts as an auxiliary liver to the fœtus in its early stages of development; others assert that it is probably an accumulation of waste products from the fœtus, together with material from the placental membranes. In other words, it is composed of detachments from the chorionic membrane, comprising epithelial cells, mesodermal tissue and uterine milk, which is a secretion found between the uterus and the chorion. Fat globules, cholesterol crystals and other epithelial cells and inclusions make up its structure.

In my opinion, it fulfils no useful function and is merely an accumulation of waste products which during pregnancy may have an attachment to the surrounding placental tissues but by parturition has become detached and is free in the amniotic fluid.

Out of forty-three parturitions studied it was present in forty, and there was never more than one per foal and it was usually expelled with the foal. In only one instance was it expelled after the expulsion of the foal and its membranes, and it is probable that it is normally situated in the amniotic cavity. There was no relationship between the period of gestation or the length of placental retention

TABLE FOR 1943

Name of Mare	Age	Due	Foaled	Foal	Onset of mammary development prior to foaling	Waxed	3rd stage of parturition	Gestation period
Point Duty ...	17 years	March 1	March 27, a.m.	Filly	4 weeks	March 25	6 hrs.	361 days
Lady Day ...	12 „	March 21	March 29, p.m.	Filly	3 „	March 28	1 hr.	343 „
Orange Light ...	8 „	March 11	March 30, a.m.	Colt	5 „	March 29, p.m.	¾ hr.	354 „
Shabwa		March 25	April 1, a.m.	Colt	4 „	March 30, p.m.	1 hr.	342 „
Princess Thor ...	5 „	March 13	April 7, a.m.	Colt	5 „	6 hrs.	½ hr.	360 „
Appeasement ...	7 „	April 21	April 25, a.m.	Filly	None	April 7	½ hr.	339 „
Humidity ...	5 „	March 10	April 9, a.m.	Filly	3 weeks	None	1 hr.	365 „
Songs of Araby	8 „	March 30	April 10, a.m.	Filly	2 „	None	¼ hr.	346 „
Apple of Eden...	12 „	March 29	April 12, a.m.	Filly	4 „	1 hr.	1 hr.	349 „
Upney Lane ...	13 „	March 20	April 15, a.m.	Colt	4 „	April 13, a.m.	1 hr.	361 „
Fishbone ...	9 „	April 5	April 16, a.m.	Colt	Unknown	April 13, a.m.	1½ hrs.	346 „
Snake River ...	6 „	March 22	April 14, p.m.	Colt	„	April 14, a.m.	1 hr.	358 „
Nathmoe ...	4 „	April 4	April 15, a.m.	Filly	4 weeks	None	¼ hr.	346 „
Empire Beauty .	9 „	March 29	April 15, p.m.	Filly	3 „	None	½ hr.	362 „
Fairy Rose ...	6 „	April 2	April 18, p.m.	Filly	5 „	5 hrs.	½ hr.	351 „
Shelton	8 „	March 5	April 20, p.m.	Filly	4 „	April 18, p.m.	1½ hrs.	381 „
Hestema ...	9 „	April 16	April 19, a.m.	Colt	Unknown	April 18, p.m.	½ hr.	338 „
Arrow Glen ...	6 „	April 19	April 22, p.m.	Filly	3 weeks	April 22, a.m.	1 hr.	337 „
Millieme ...	10 „	April 17	April 23, a.m.	Filly	3 „	None	5 mins.	341 „
Bonnie Baine ...	15 „	April 18	April 24	Filly	5 „	April 23, a.m.	1 hr.	357 „
Petty Sessions ...	7 „	March 30	April 24, a.m.	Filly	3 „	None	1 hr.	361 „
Battle Dress ...	5 „	April 6	April 24, a.m.	Filly	Unknown	None	½ hr.	353 „
Hayling Pet ...	7 „	March 15	April 25, a.m.	Filly	3 weeks	3 hrs.	1 hr.	376 „
Toy Apple ...	8 „	April 27	April 28, a.m.	Filly	3 „	April 24, p.m.	2 hrs.	336 „
Mary Joan ...	11 „	March 20	April 25, a.m.	Colt	Unknown	12 hrs.	¼ hr.	371 „
Nicolette ...	18 „	May 1	May 1, a.m.	Colt	4 weeks	None	1 hr.	335 „
Carthage ...	13 „	April 30	May 1, a.m.	Colt	3 „	None	1½ hrs.	336 „
Boxworth ...	5 „	April 26	May 3, a.m.	Colt	3 „	None	1½ hrs.	342 „
Fleur D'Amour .	9 „	April 30	May 4, a.m.	Colt	3 „	2 hrs.	1 hr.	339 „
Diana Buttercup	12 „	April 20	May 4, p.m.	Filly	3 „	4 hrs.	¾ hr.	349 „
Bright Prospect .	10 „	April 23	May 6, p.m.	Filly	4 „	None	¾ hr.	348 „
Misty	6 „	May 18	May 19, a.m.	Colt	3 „	May 17, p.m.	¼ hr.	336 „
Heliantha ...	5 „	April 25	May 24, a.m.	Colt	3 „	None	¾ hr.	364 „
Zelina		Jan. 19	Feb. 6	Colt	6 „			353 „
Miss Cameron ...		March 9	Feb. 27	Colt	2 „			325 „
Benvenuto Cellini		April 14	March 2	Twins, Fillies,				292 „
Malatesta ...		March 9	March 15	Colt		None		341 „
Nightfall 2nd ...		March 1	March 8	Colt				342 „
Pirouette 4th ...		Feb. 27	March 17	Filly	Unknown			353 „
Sicilian Maid ...		March 22	March 2	Filly	3 weeks			334 „
Swell Dame ...		Feb. 27	March 21	Filly	3 „			353 „
Finella		Feb. 27	March 22	Colt	3 „			356 „
Lampeto ...		March 22	March 26	Colt	5 „			339 „

and the occurrence of this structure. It can be stated that the hippomanes would appear to be a normal body in the mare, and expelled at the time of birth of the foal, having been situated in the amniotic sac. It seems to have no special function and represents accumulation of waste products of the fœtus, together with tissues and material normally present in the pregnant uterus.

Post-parturient Œstrus

The occurrence and duration of œstrus following parturition was studied in forty-two mares. It was the practice at the stud to serve the mare on the first day of œstrus and again in forty-eight hours if œstrus was still present. In the mare, ovulation usually occurs about twenty-four hours prior to the cessation of œstrus, and it is at this time that fertilisation is most likely to take place. The object in serving mares on the first day was because some have a very short œstrus period and there was a risk that the mare would go out of œstrus if service was delayed. In point of fact, thirteen mares were served only once, as it was found that they would not accept service forty-eight hours later. In thirty-nine mares œstrus commenced under fourteen days of foaling, the variation range being eight to thirteen days. The manifestation of œstrus varied from two to four days.

Twenty-one mares showed œstrus on the ninth day and ten mares on the tenth day following parturition. One came into œstrus on the eighth day and six on the eleventh. In one instance œstrus was observed on the thirteenth day.

In three cases there was a long interval between parturition and œstrus. For example, Benvenuto Cellini, who aborted twins at the 292nd day, did not show any sign of the first œstral period until twenty-eight days later, and this persisted for three days. Zelina, who aborted in 1942 but produced a healthy foal in 1943 with a gestation period of 353 days, showed œstrus thirty-eight days later. Songs of Araby foaled at the 346th day of gestation and came into œstrus thirty-eight days later. Excluding these three, twelve returned to œstrus a second time, and of this number three returned to a third œstral period. There was no connection between the duration of the previous pregnancy and the subsequent "holding" to service. In effect, a long period of gestation was not associated with several returns to service, any more than the time taken for the completion of the third stage of labour.

There is much divergence of opinion on the advisability of serving mares at the first œstrus following parturition. Compared with the cow, the mare has a longer period of gestation, and as a result fœtal development is less rapid. In addition, the mare has not got to produce the fantastic qualities of milk, and therefore the strain on her system is negligible. In effect, the mare is bred for progeny, not for milk production. It can therefore be stated that, provided the mare has had a normal parturition and examination reveals that her genital passage is clean, little harm can come from serving her at the first manifestation of œstrus.

On the other hand, if there is any pathological condition present due to causes known or unknown, the first œstrus must be missed and service delayed until careful examination makes certain that conditions have been restored to normal. Unless this is done, not only will conception fail to take place, but the infection present may be transmitted to the stallion, who in turn passes it

1943 TABLE SHOWING ŒSTRAL PERIODS AND DAYS OF SERVICE

Name of Mare	Gestation period	Foal Heat, days post-parturition	2nd œstral period days after foal heat	3rd œstral period
Point Duty ...	361 days	9th & 11th days		
Lady Day ...	343 „	10th day		
Orange Light ...	354 „	8th & 10th days	76th & 77th days	
Shabwa	342 „	9th day	29th & 30th days	
Princess Thor ...	360 „	10th & 12th days		
Appeasement ...	339 „	9th & 11th days		
Humidity ...	365 „	9th & 11th days		
Songs of Araby .	346 „	25th & 27th days		
Apple of Eden ...	349 „	9th & 11th days	20th & 24th days	
Upney Lane ...	361 „	11th day		
Fishbone ...	346 „	10th day		
Snake River ...	358 „	9th & 11th days		
Nathmoe ...	346 „	13th & 15th days	38th & 40th days	
Empire Beauty .	362 „	9th & 11th days		
Fair Rose ...	351 „	9th day		
Shelton	381 „	11th day		
Hestema ...	338 „	11th & 13th days		
Arrow Glen ...	337 „	9th day		
Millieme ...	341 „	9th day	21 days	
Bonnie Baine ...	351 „	10th & 12th days		
Petty Sessions ...	361 „	11th & 14th days		
Battle Dress ...	353 „	11th day		
Hayling Pet ...	376 „	9th & 11th days		
Toy Apple ...	336 „	9th day		
Mary Joan ...	371 „	9th day		
Nicolette ...	335 „	9th & 11th days		
Carthage ...	336 „	10th day		
Boxworth ...	342 „	10th day		
Fleur D'Amour .	339 „	10th & 12th days		
Diana Buttercup .	349 „	9th & 11th days	19th & 22nd days	
Bright Prospect .	348 „	9th & 11th days	17th & 19th days	
Misty	336 „	9th & 11th days		
Heliantha ...	364 „	9th day		
Zelina	353 „	38th & 40th days		
Miss Cameron ...	325 „	9th & 11th days		
Benvenuto Cellini	292 „	28th & 30th days	41st & 43rd days	25th & 27th days
Malatesta ...	341 „			
Nightfall 2nd ...	342 „	11th & 13th days		
Pirouette 4th ...	353 „	10th & 11th days	31st & 34th days	
Sicilian Maid ...	334 „	9th & 11th days	20th & 21st days	61st & 63rd days
Swell Dame ...	353 „	10th & 12th days	17th & 20th days	
Finella	356 „	9th & 11th days		
Lampeto ...	339 „	10th & 12th days	29th day	22nd & 24th days

TABLE FOR 1942

Name of Mare	Foal	3rd stage of parturition	Waxing	Gestation period
Sister Ann	Filly	Within 1 hour		335 days
Streak	Filly	„ 1 „		335 „
Abbubah	Filly	„ 1 „		335 „
Burnham Wood	Colt	„ 1 „		342 „
Welsh Dame	Filly	„ 1 „		334 „
Speaking Likeness ...	Colt	„ 1 „		340 „
Prize Law	Colt	„ 1 „		350 „
La Sansugiere	Colt	Unknown		338 „
Hokey Pokey	Filly	„		309 „
Birdline	Colt	„		335 „
Busman's Honeymoon ...	Colt	„		361 „
Queen's Bounty	Filly	„		354 „
Golden Penny	Colt	„		331 „
Maggie	Colt	„		353 „
Pecked	Filly	45 minutes	2 days	355 „
Rose of Buckingham ...	Colt	15 „	No wax	343 „
Dictum	Filly	45 „	7 days	334 „
Humouresque	Filly	1 hour	1 day	353 „
Yeovil	Colt	8 hours	1 day	352 „
Apple of Eden	Filly	1 hour	1 day	325 „
Paringa	Colt	1 hour	No wax	348 „
Royal Step	Filly	30 minutes	1 day	348 „
Diana Buttercup	Filly	4 hours	No wax	336 „
Fishbone	Colt	1 hour	Same day	341 „
Noble Mary	Colt	1 hour	No wax	345 „
Call Bell	Filly	1 hour	No wax	349 „

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on to every mare which he covers, giving rise to a disease known as "Vesicular Exanthema," which is well described by Wallis Hoare[8].

Although in such cases the ovum may be fertilised, it may perish owing to the unhealthy state of the endometrium, and the mare will then return to œstrus after a prolonged period of anœstrus; or she may remain in a state of anœstrus until the next breeding season. It is thought that this may have been the case with Orange Light, who returned to œstrus seventy-six days after covering. In her case, the parturition appeared to be normal in every way, but there was possibly a mild infection in the endometrium which prohibited implantation of the fertilised ovum. It is, however, not possible to arrive at a definite conclusion.

Summary

(1) Mammary development in the mare commences three weeks before parturition.
(2) The absence of "waxing" does not preclude imminent parturition, but when present parturition usually follows within 48 hours.
(3) The duration of gestation has no bearing on the sex of the foal.
(4) There is no relationship between gestation and retention of the placental membranes.
(5) It would appear that the period of gestation has little or no influence on the future breeding prospects of the foals produced.
(6) The thoroughbred mare should complete her parturition under two hours.
(7) The practice of ligating the umbilical cord and its vessels is a questionable proceeding.
(8) The hippomanes represents an accumulation of waste products and is not a definite structure.
(9) Service following parturition should be determined by the condition of the genital passage.

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VETERINARY EDUCATION IN POLAND

By M. A. SOLTYS, Ph.D., Dr. Med. Vet. (Lwow) (Research Institute, Pulawy), *Institute of Animal Pathology, University of Cambridge*

In its history, Poland was not only a guardian of Europe against the attacks of the Tartars and other Eastern hordes, but also against various pests menacing man and animals.

Prof. H. Zinsser, the well-known American bacteriologist, who visited Poland after the last war, wrote in his book "As I Remember Him" that "the European world, and especially Germany, owes an inestimable debt to Poland. If typhus and cholera did not sweep across the Russian borders into Western countries during these years, it is to a large degree owing to the splendid sanitary organisation by which the Poles guarded their frontiers. The

accomplishment of this task by a young state, within a few years after being overrun by hostile armies, with little help, except that given by the League of Nations, represents a feat of intelligence and energy that has rarely been exceeded." Similarly, the control of the spread of animal diseases was established. After the last war the epizootic of Rinderpest of Eastern origin was vigorously combated and promptly eradicated, thus saving the small number of European livestock left after the ravages of war and protecting Europe against the disaster of famine.

Veterinary history in Poland starts at the beginning of the 16th century, when the first veterinary book was printed in Polish in 1514. The decision to create a veterinary school was formulated by the Polish Parliament in 1768. However, a few years later Poland was partitioned by Russia, Prussia and Austria, and the difficult political situation which arose prevented the fruition of the plan.

In 1784 the University of Lwow inaugurated a Chair of Veterinary Medicine in the medical faculty, which lasted until 1849. In 1802 the University of Cracow founded a Chair of Veterinary Science, which existed until this war and was then occupied by Prof. J. Nowak, the well-known veterinary bacteriologist, who was also Polish Prime Minister for a time. The first Polish veterinary school was founded in Poland in 1806 at the University of Wilno, its first professor being a physician, Bojanus, educated at the Royal Veterinary College in London and at the Veterinary School at Alfort in France. This school was closed in 1841 and has never been re-established. In 1820 the Veterinary School in Warsaw was opened, but this was suppressed by the Russian Government in 1831, following the Polish rising, in which many of the students took part.

In 1846 the Russian Government opened a new school which after 1889 was called the Veterinary Institute. In 1914, after the outbreak of the last war, the Russian Government evacuated the school to Saratow. After the restoration of Poland this veterinary school was reopened and became attached to the University of Warsaw as a faculty.

In 1881 there was established a Veterinary School at Lwow which in 1896 became the University School called the Academy of Veterinary Medicine. The Veterinary School of Lwow was for some time one of the best schools in Central Europe. It had many students from different countries, particularly from the Balkan States (Slavs, Croats, Serbs, Bulgarians and, before the creation of the veterinary school in Brno, Czechs).

The course in both Polish veterinary schools took five years to complete, during which the students had to pass two preclinical examinations and three professional examinations. The first preclinical examination was concerned with chemistry, physics, zoology and botany, and the second preclinical examination with physiology, histology and embryology, anatomy and biochemistry. Of the professional examinations, the first was concerned with pathology, bacteriology, veterinary hygiene, dietetics and animal husbandry, practical pharmacy, topographical anatomy, parasitology, and the second with pharmacology, histopathology, orthopædics, surgery including ophthalmology, and veterinary medicine. The subjects for the final professional examination were infectious

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diseases, meat and food inspection, veterinary obstetrics, animal breeding, veterinary jurisprudence and sanitary law. The students were examined by their own professors in the presence of two other professors of the same school. After passing all these examinations, the veterinary student obtained the same degree as the medical student, but with the addition of the word "Veterinary." Thus the medical degree was "Lekarz" and the veterinary degree "Lekarz Weterynaryjny." The veterinary graduate could obtain the degree of Doctor of Veterinary Medicine just as the medical graduate could become Doctor of Medicine. In order to obtain this post-graduate degree at least two years' research at the University and submission of a thesis was necessary. The candidate had also to pass an oral examination in two subjects closely related to the subject of his thesis.

That the high University status of veterinary surgeons increased the public's respect for them was shown by the growing number of young men wishing to enter the Veterinary School (about 500 candidates a year, of which only 200 could be accepted on account of the lack of room).

The veterinary surgeon who wanted to join the State Veterinary Service received preliminary training, which consisted of three months at an abattoir recommended by the Ministry of Agriculture, three months with a veterinary inspector, three months with a divisional veterinary inspector and three months at the Research Institute at Pulawy, mostly on diagnostic work. Then he had to pass an examination in State Veterinary Medicine. (His salary and expenses were paid by the Government during this time.) The veterinary surgeon who wished to enter municipal work had to pass a six weeks' course at one of the large abattoirs recommended by the Ministry of Agriculture.

Research work was carried out in the Veterinary Department of the Research Institute at Pulawy, near Warsaw, and at the Universities. The Veterinary Department of the Research Institute at Pulawy contained four sections: (1) production of sera and vaccines; (2) research; (3) parasitology; (4) general diagnosis and control of biological products prepared by commercial firms. In addition, there were seven diagnostic laboratories established in various districts of Poland (Lwow, Cracow, Warsaw, Katowice, Bydgoszcz, Brzesc on the Bug, Wilno), one diagnostic and research station for diseases of bees, two for diseases of freshwater fish, and one at Gdynia for research of sea fish.

The large abattoirs also had diagnostic laboratories for meat and food inspection under veterinary control. At the Universities of Cracow and Poznan there were Chairs of Veterinary Science attached to research institutes. The Universities of Wilno and Lublin had only readers or lecturers.

The following veterinary journals were published in Poland: *Przeglad Weterynaryny* (Veterinary Review), *Wiadomosci Weterynaryjne* (Veterinary News), *Rozprawy Biologiczne* (Biological Proceedings), *Weterynaria Wspolczesna* (Veterinary Science), *Wojskowy Przeglad Weterynaryjny* (Army Veterinary Review). All were published monthly, except for the last mentioned, which was published occasionally.

The majority of the veterinary surgeons in Poland worked as municipal veterinary surgeons, because every town with a population of over 8,000 had to have a veterinary surgeon, who was responsible for the ante-mortem and post-

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mortem examination of animals in the abattoirs. The meat inspection system, reorganised by Prof. A. Trawinski, a pupil of Prof. Ostertag, was quite efficient, but milk inspection was only in its infancy. A certain number became county veterinary surgeons, who worked in the county veterinary dispensaries, where a farmer could get medicine and help for a small fee. The dispensaries were established by the county councils. A few of the graduates joined the Government Veterinary Service and the Army Veterinary Corps, or were employed in teaching and research. There were few whole-time veterinary practitioners in Poland, because all others, such as municipal, county and state veterinary surgeons, were free to engage in private practice. The majority of the Polish veterinary surgeons were members of the Polish Veterinary Medical Association.

The Ministry of Agriculture established the Veterinary Council, which consisted of representatives of the veterinary schools, the Veterinary Institute at Pulawy, the Government Veterinary Service, the Municipal Veterinary Service, the County Veterinary Service and the farmers' associations. The Council held its meetings at least twice yearly, deliberating upon topical problems of animal diseases.

Since the outbreak of the war all Polish Universities have been closed by the Germans and no veterinary students have graduated in Poland. The veterinary surgeons who escaped and joined the Polish Army in France and later, after the collapse of France, came to Great Britain, have become paratroops, tank drivers, supply officers, etc., because our Army has become mechanised and our veterinary surgeons have not been employed in inspection of foodstuffs like the American veterinary surgeons. However, thanks to the great help of the British veterinary profession and the Polish authorities, our veterinary surgeons have been able to keep up to date in recent progress in veterinary science, either by visiting many research institutes or by assisting a practitioner for a time. Some of our research workers have even been able to continue their research. In addition, our students who were in their final year at the outbreak of war have had the opportunity to complete their course through the hospitality of the Royal (Dick) Veterinary College in Edinburgh and the help of the Polish teaching staff in Scotland.

In conclusion, I should like, on behalf of all Polish veterinary surgeons in Great Britain, to express our deepest gratitude to all in this hospitable country who have helped us by providing an opportunity, both to do research work or to refresh our veterinary knowledge, which we all desire to do, in order that we may serve both our country and our honourable profession.

Clinical Cases

AN UNUSUAL CASE OF FEMORAL HERNIA IN A FOWL

By
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R. A. ROPER, B.Sc., M.R.C.V.S., Assistant V.I.O.;
and
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Seale-Hayne Agricultural College, Newton Abbot.

Subject.—An R.I.R./Light Sussex hen, 2½ years old, received for post-

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mortem examination November 30, 1943, with the following :—

History.—A slowly progressive disease was noted for about six weeks before death, but no eggs were laid for the last three months. Previously it had laid an average number of eggs comparable to the rest of the small flock. The chief symptoms noted by the owner were a tendency to huddle by itself and, although eating its food regularly until the last few days, it lost condition and became progressively weaker. It appeared to improve after dosage with castor oil, but remained anæmic and its feathers lacked sheen. It would not perch at night, probably due to the weakness and/or painful condition.

Post-mortem findings.—Cultural examination gave negative results. An examination for parasites showed that a few tapeworms (*Davainea spp.*) only were present.

Otherwise the bird was affected with a necrotic type of enteritis, negative for acid-fast bacteria and probably due to bowel stasis and also an acute enteritis at the site of the hernia. There was an incarceration of a short loop of intestine into the pelvic bones. Some inspissated yolk material was present in the oviduct. The bird showed no signs of having recently laid any eggs.

The essential lesion (hernia) probably caused an intermittent impaction of the bowel and the enteritis noted above and ultimately death of the bird.

As this case was unique in one of the writer's experience (C. V. Watkins), the interesting portion of the carcass was forwarded to Mr. P. G. D. Morris for dissection and comment, and he gives the following description of the specimen after consulting various people for their opinion :—

"Femoral Hernia in the Fowl

"On examining the specimen it was seen that a loop of the small intestine had passed through the greater sciatic foramen, possibly due to peristaltic action during lateral displacement by the passage of an egg. The piece of small intestine then might be held in this position by the contractions of the muscles, ileo-psoas (medially) and superficial gluteal (laterally) : passive venous congestion would occur almost immediately, due to the compression of the intestinal veins of the part.

"The consequent increase in volume of the herniated part would prevent its withdrawal and it would be trapped by part of the ligament.

"It is probable that the condition has been in existence for a short time, as there is an indication of a slight organisation of the inflammatory exudate around the part which attached the herniated intestine to the bony part of the region 'the greater sciatic foramen.'"

A photograph of the lesion before dissection shows its position on the left side of the pelvis. To aid illustration, some cotton-wool has been placed under the two pieces of bowel and close up to the herniated loop.

Femoral Hernia in the Fowl—The photograph shows its position on left side of pelvis.

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Abstracts

A MAN WITH TWO COWS—SIX ISMS TO CHOOSE FROM*

MR. EDGAR GRANVILLE, Independent M.P. for Eye, Suffolk, question-master at an agricultural brains trust at Cotton, Suffolk, recently suggested these alternatives as post-war plans for a man with two cows:

Under Capitalism you sell one cow and buy a bull. Under Socialism you give one to your neighbour.

Under Common Wealth you give both cows to the National Trust but keep the milk of one. Under Bureaucracy you hand the cows to the War Agricultural Executive Committee while you fill in forms.

Under Communism you give the two cows to the State for artificial insemination to produce red calves. Under Nazism the Government shoots you and takes both cows.

* *Express*, February 2, 1944.

Reviews

Practical Veterinary Pharmacology, Materia Medica and Therapeutics. By HOWARD JAY MILKS, D.V.M. Fifth edition. Pp. xi, 673. 33 illustrations. Published by Baillière, Tindall & Cox. Price 37s. 6d.

NEW editions of veterinary text-books are usually too long delayed, but the present publication of this popular work follows its predecessor after an interval of only three years. Changes in U.S. drug standards and additional knowledge have made this necessary.

The general plan is the same as in former editions, introductory material being followed by a detailed description of the various drugs grouped according to action, and a final chapter by Dr. A. Eichhorn on biological products.

Several drugs are included for the first time, but chief interest obviously centres around the sections dealing with phenothiazine and the sulphonamides. The account of phenothiazine is concise and well balanced, indicating the efficacy of the agent and the occasional possible toxic effects. There is an obvious mistake of grains for grams in reference to sheep dosage. The chapter on the sulphonamides covers ten pages and shows the scope of these agents in both veterinary and human medicine. A bibliography of 30 references is appended to this section, and one cannot help feeling that more of the British work might have been noted.

Recent advances in the knowledge concerning vitamins and hormones have necessitated much revision of these portions. The author summarises the facts in relation to sex hormones and, while indicating their possible application, wisely warns the reader against hoping for too spectacular results in the light of present information.

Student and practitioner will find much of interest and value in this book.

J.W.H.H.

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The Practice of Veterinary Medicine. By D. H. Udall, D.Sc., B.S., D.V.M., Professor of Veterinary Medicine and Superintendent of the Ambulatory Clinic Emeritus in the New York State Veterinary College at Cornell University. Fourth revised edition. Published by the Author, Ithaca, New York, 1943. Price 37s. 6d.

When Professor Udall first produced this book in 1933 his endeavour was to present a concise and systematic description of the various internal diseases of herbivorous animals and swine. There is no doubt that he succeeded in his task, for the book found a ready acceptance from both the undergraduate and the practitioner. For the first time the reader had within the limits of a handy tome a standard text-book covering an enormous field, and yet the information therein was concise and lucid. It can be no surprise that within a period of ten years a fourth edition is necessary. This decade has witnessed many changes and advances in veterinary science, and this present edition has been revised and brought up to date. To those who would delve further into the problems of any particular condition the excellent series of references, which are appended so conveniently at the end of each discussion, will prove invaluable. Since its birth the book has grown, and this last edition contains some fifty pages of new material, but it still has the spirit of the original Udall, i.e., a handy text-book containing all the essential facts about the subjects under review and a guide to those who wish to delve further into veterinary literature. To the student it is essential; to the graduate it is a boon.

Lameness in a Mare Due to Brucella Infection. By J. D. Beck, University of Pennsylvania Bulletin, School of Veterinary Medicine, Veterinary Extension Quarterly, No. 92, 1943, 19.

The author reports a case of alternating lameness in a four-year-old saddle mare. The lameness extended over a period of two years, during which each of the legs at one time or another showed lameness. When brought for treatment there was an organised mass of tissue 3 in. x 8½ in. over the lateral aspect of the flexor tendons 2 in. above the off hind fetlock. At a subsequent autopsy a pure culture of brucella abortus was isolated from the swelling. In life the blood serum agglutinated brucella abortus in high dilution.

In this country lameness in young horses accompanied by swelling of joints and tendon sheaths is often associated with a blood serum positive to brucella abortus and/or streptococcus vividans. Good results follow application of the appropriate vaccine.

Editor.

Obituary

LIEUT.-COL. A. A. COMERFORD, D.S.O., M.R.C.V.S.

Col. Comerford died on February 25, 1944, after a long period of ill-health following the Battle of Flanders and the great retreat of May, 1940. He was the son of Michael H. Comerford, M.R.C.V.S., who practised at Stratford

LIEUT.-COL. A. A. COMERFORD, D.S.O., M.R.C.V.S.

(West Ham) and had a great business in the golden days of the horse. This practice was one of the oldest in the London district and it was known as Helmore and Comerford, for Mr. Helmore (Col. Comerford's grandfather) had practised there for many years before he was joined by his son-in-law. When Mr. Comerford, senr., joined the business it had a great rural connection, but as London grew so the farms departed, and in turn it became one of the largest horse practices in the country. Col. Comerford was born on January 30, 1886. He was educated at Mount St. Mary's College, Chesterfield. In due course he proceeded to the Royal Veterinary College, from which he qualified M.R.C.V.S. in December, 1909. In the same year he married Magdalen, daughter of Richard van Zellen, the Portuguese Vice-Consul, and the Countess van Zellen. He did not stay in the family business for he was attracted to the country, and he was in practice at Caxton until the outbreak of the Great War. He served in the A.V.C. in this country and in Salonica. In the latter place he contracted malaria and unfortunately suffered periodically from the after-effects until the end.

After the war he made his home at Long Potton. He served in the R.A.V.C. (T.A.), rising to the rank of Major. In 1933, when the T.A. establishment of veterinary officers was reduced, he transferred to the R.A. (T.A.). The unit was the Bedfordshire Yeomanry 52nd Heavy Regiment, to which he had been Veterinary Officer. In May, 1939, he took command with the rank of Lieut.-Colonel. He took the regiment to France in March, 1940. When Belgium was invaded the regiment saw much action, first as road police for military movements. Then they were ordered to the village of St. Momelin, N.W. of St. Omer. By this time matters were so critical that they had to send back their guns to a safety area and function as infantry. Although this was a type of work for which the regiment had not been trained and at times they were surrounded by the Germans, Col. Comerford handled the situation so well that they held up the enemy for some days and then were able to withdraw intact. They made a great fighting retreat to the beaches at Dunkirk and in due course, after several days, reached England. It says much for Comerford's tactical skill that, in spite of the severe actions, the total of the regiment's casualties was only 25. For his services on this occasion Col. Comerford was awarded the D.S.O.

Although Comerford gained this distinction as a gunner and not as a veterinary officer, it is right that we should record such deeds of valour in our journals, for the profession can be proud to have such men in its ranks, men who give the lie to the age-old statement that a professional man is not fitted to hold responsible administrative or executive posts.

Although he was a capable veterinary surgeon, Col. Comerford always had other interests. He hunted with the Cambridgeshire 1910-35, and for five years (1930-35) was Secretary and Field Master. He was Veterinary Surgeon to the Cambridgeshire and also to the Oakley, and had an extensive practice in the hunting world.

He was closely associated with Laidlaw and Dunken in their work on distemper, and conducted the early field trials in the Cambridgeshire and Oakley hounds.

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He was a tall handsome man, strict, at times rather severe, but always just and courteous, especially so to his poor clients.

He leaves a widow, two daughters and two sons. One of the daughters is the wife of R. P. Webber, M.R.C.V.S. His sons hold commissions in his old regiment, the Bedfordshire Yeomanry, and were with the regiment in France, Flanders and at Dunkirk.

CORRECTION

In the article by E. Cotchin entitled "Marie's Disease (Hypertrophic Pulmonary Osteo-Arthropathy): Two Further Cases in the Dog," in the March, 1944, number, the photograph of figure 2 was printed upside down, so that the top left appeared at the bottom right.

Publishers' Notices

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Letters for the Journal, literary contributions, reports, notices, books for review, exchanges, new instruments or materials, and all matter for publication (except advertisements) should be addressed to the Editor.

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